

**STATEMENT OF BASIS
TOWN OF HENEFER SEWAGE TREATMENT LAGOONS
UPDES PERMIT NO. UT0020192
RENEWAL PERMIT
MINOR MUNICIPAL**

FACILITY CONTACT

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DESCRIPTION OF FACILITY

Henefer Town, population approximately 700, is served by a four-cell lagoon sewage treatment system comprising 15.59 acres. The facility consists of an influent Parshall Flume, Stevens flow recorder, four lagoon cells, variable level draw-off from cell number 4, ultraviolet disinfection and an 18-inch concrete discharge pipe to the Weber River. The original three lagoon cells were constructed in 1974; the fourth cell and ultraviolet disinfection unit were added in 1988. The lagoon system's design flow as calculated by Paul Krauth of the Division of Water Quality is 0.23 MGD, continuous discharge.

The facility is located approximately 0.61 miles northwest of Henefer Town, latitude 41°01'53" and longitude 111°30'24," with outfall STORET Number 492601.

DESCRIPTION OF DISCHARGE

The facility currently discharges on an intermittent basis in order to maintain maximum efficiency of the ultraviolet disinfection system. The flow volume during discharge intervals is 0.35 MGD for approximately 6 days, 7 times per year.

A review of the past 5 years of discharge data shows that when discharge occurs, there are occasional excursions of the limits for 5-day biochemical oxygen demand (BOD₅) and frequent excursions of limits for total suspended solids (TSS), BOD₅ percent removal, and TSS percent removal. Most of these problems are attributed to the production, discharge, and nutrient cycling of algae and duckweed.

RECEIVING WATER AND STREAM CLASSIFICATION

As described above, discharge goes to the Weber River, which is classified as 1C, 2B, 3A, and 4 according to Utah administrative Code (UAC) R317-2-13:

- Class 1C - Protected for domestic purposes with prior treatment processes as required by the Utah Division of Drinking Water.
- Class 2B - Protected for secondary contact recreation (boating, wading, and similar uses).
- Class 3A - Protected for cold-water species of game fish and other cold-water aquatic life, including the necessary aquatic organisms in their food chain.
- Class 4 - Protected for agricultural uses including irrigation of crops and stock watering.

SUMMARY OF CHANGES FROM PREVIOUS PERMIT

In its renewal application, the facility requested and was granted the alternative effluent limitations for TSS and BOD₅ for small lagoons as found in R-317-1-3.2-G. The limits for TSS and BOD₅ will now be a maximum monthly average of 45 mg/L and a maximum weekly average of 65 mg/l. The percent removal for TSS and BOD₅ were decreased to 65% since the facility was granted the alternate effluent limitations. *E. coli* and pH, are unchanged from the previous permit.

Since the facility discharges into a Class 1C water, a Level II Anti-degradation review was conducted. The Level II review concluded that since this was a permit renewal, that water quality would not be degraded beyond current limits. It was also found that the facility should try to seasonally control the discharge, explore land application options, and improve O&M. These options should not exceed 20% of the current operation costs for the facility.

BASIS FOR EFFLUENT LIMITATIONS

Limitations on TSS, BOD₅, *E. coli*, pH, and percent removal for TSS and BOD₅ are based on current *Utah Secondary Treatment Standards, UAC R317-1-3.2*. The DO limit is water quality based, and derived by wasteload analysis (attached). Wasteload analysis indicates that these limitations should be sufficiently protective of water quality in order to meet Utah water quality standards in the receiving waters.

Henefer is being required to monitor phosphorus because the Weber River segment between the confluence of Lost Creek and Echo Reservoir is on the 2008 and 2010 303(d) lists of impaired waters. The listing is based on assessments of the benthic macroinvertebrate population. The source of the impairment is undetermined but a TMDL study is required.

EFFLUENT LIMITS

The permit effluent limitations are summarized below.

Parameter	Effluent Limitations <u>a/</u>			
	Maximum Monthly Avg	Maximum Weekly Avg	Daily Minimum	Daily Maximum
Flow, MGD	NA	NA	NA	0.35
BOD ₅ , mg/L	45	65	NA	NA
BOD ₅ Min. % Removal	65	NA	NA	NA
TSS, mg/L	45	65	NA	NA
TSS Min. % Removal	65	NA	NA	NA
E-Coli, No./100mL	126	157	NA	NA
TRC, mg/L <u>b/</u>	NA	NA	NA	0.186
DO, mg/L	NA	NA	4.0	NA
Oil & Grease, mg/L	NA	NA	NA	Visual/10
pH, Standard Units	NA	NA	6.5	9.0
Total Phosphorous, mg/L	NA	NA	NA	Report

a/ See Definitions, *Part VI*, for definition of terms.

b/ TRC will only be required to be sampled if the UV system is not being used for disinfection.

NA – Not Applicable

SELF-MONITORING AND REPORTING REQUIREMENTS

The following effluent self-monitoring requirements are based on the *Utah Monitoring, Recording and Reporting Frequency Guidelines*, effective December 1, 1991 and are the same as those in the previous permit. Reports shall be made on Discharge Monitoring Report (DMR) forms, which are to be submitted monthly and are due twenty-eight (28) days after the end of the monitoring period.

Self-Monitoring and Reporting Requirements <i>a/</i>			
Parameter	Frequency	Sample Type	Units
Total Flow <i>b/ c/</i>	Continuous	Recorder	MGD
BOD ₅ , Influent <i>d/</i> Effluent	Monthly	Grab	mg/L
	Monthly	Grab	mg/L
TSS, Influent <i>d/</i> Effluent	Monthly	Grab	mg/L
	Monthly	Grab	mg/L
<i>E. coli</i>	Monthly	Grab	No./100mL
TRC <i>e/</i>	Daily	Grab	mg/L
DO	Monthly	Grab	mg/L
Oil & Grease <i>f/</i>	Monthly	Visual/Grab	mg/L
PH	Monthly	Grab	SU
Total Phosphorous	Monthly	Grab	mg/L

a/ See Definitions, *Part VI*, for definition of terms.

b/ Flow measurements of influent/effluent volume shall be made in such a manner that the permittee can affirmatively demonstrate that representative values are being obtained.

c/ If the rate of discharge is controlled, the rate and duration of discharge shall be reported.

d/ In addition to monitoring the final discharge, influent samples shall be taken and analyzed for this constituent at the same frequency as required for this constituent in the discharge.

e/ TRC will only be required to be sampled if the UV system is not being used for disinfection.

f/ A visual monitoring will be conducted monthly for an oil and grease sheen. If a sheen is observed, then a grab sample shall be taken and shall not exceed 10 mg/L.

STORM WATER REQUIREMENTS

Because the population served is under 10,000, no storm water permit is required. This permit may be re-opened and modified at any time during its lifetime to include any applicable storm water provisions and requirements per *UAC R317-8*.

PRETREATMENT REQUIREMENTS

The permittee has not been designated for pretreatment program development because it does not meet conditions which necessitate a full program. The flow through the plant is less than five (5) MGD, there are no categorical industries discharging to the treatment facility, industrial discharges comprise less than 1 percent of the flow through the treatment facility, and there is no indication of pass through or interference with the operation of the treatment facility such as upsets or violations of the POTW's UPDES permit limits.

Although the permittee does not have to develop a State-approved pretreatment program, any wastewater discharges to the sanitary sewer are subject to Federal, State and local regulations. Pursuant to *Section 307* of the *Clean Water Act*, the permittee shall comply with all applicable Federal General Pretreatment Regulations promulgated, found in *40 CFR 403* and the State Pretreatment Requirements found in *UAC R317-8-8*.

An industrial waste survey (IWS) is required of the permittee as stated in Part II of the permit. The IWS is to assess the needs of the permittee regarding pretreatment assistance. The IWS is required to be submitted within sixty (60) days after the issuance of the permit. If an Industrial User begins to discharge or an existing Industrial User changes their discharge, the permittee must resubmit an IWS no later than sixty days following the introduction or change as stated in Part II of the permit.

It is recommended that the permittee perform an annual evaluation of the need to revise or develop technically based local limits for pollutants of concern, to implement the general and specific prohibitions *40 CFR, Part 403.5(a)* and *Part 403.5(b)*. This evaluation may indicate that present local limits are sufficiently protective, need to be revised or should be developed. It is recommended that the permittee submit for review any local limits that are developed to the Division of Water Quality for review.

BIOSOLIDS MANAGEMENT REQUIREMENTS

As required by the 1987 amendments to the *Clean Water Act*, EPA has established toxic contaminant criteria and other requirements for sewage sludge use and disposal by works treating domestic sewage. These regulations are found in *Title 40 CFR, Part 503 (Part 503)*. This is a self-implementing regulation, so that compliance is mandatory even if a facility has not yet received a permit. Monitoring and reporting requirements in *Part 503* took effect July 19, 1993. Metal, pathogen, and vector limits and management requirements went into effect February 19, 1994. In addition, the permittee must comply with applicable state rules, including *Disposal of Domestic Wastewater Treatment Works Sludge, UAC R317-1-6* and *Land Application of Sludge, UAC R317-3-9*.

Since Henefer Town's treatment facility is a lagoon system that does not produce sludge on a regular basis, the requirements of *Part 503* do not apply unless or until the sludge is removed from the bottom of the lagoon system and used or disposed of in some way.

BIOMONITORING REQUIREMENTS

As part of a nationwide effort to control toxic discharges, biomonitoring requirements are being included in permits for facilities where whole effluent toxicity (WET) is an existing or potential concern. In Utah, this is done in accordance with the State of *Utah Permitting and Enforcement Guidance Document for Whole Effluent Toxicity Control (Biomonitoring)*. Authority to require effluent biomonitoring is provided in *UAC R317-8-4.2* and *R317-8-5.3* and *Water Quality Standards, UAC R317-2-7.2*.

Since there are no industrial dischargers to the wastewater system the reasonable potential for toxicity in the discharge is not apparent. As such, there will be no numerical WET limitations or WET monitoring requirements in this permit. However, the permit will contain a toxicity limitation re-opener provision.

PERMIT DURATION

It is recommended that this permit be effective for duration of five (5) years.

Drafted by Lonnie Shull
Environmental Scientist
Utah Division of Water Quality
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